DETAILED ACTION

Claims 1-12 and 19-26 are pending. New claims 19-26 were added in the amendment filed 10 Nov. 2009. Claims 6-8, 11-12 and 22-26 have been withdrawn. Claims 1-5, 9-10 and 19-21 have been treated on the merits.

Election/Restrictions

1. Claims 6-8, 11-12 and 22-26 (new) have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 16 April 2009, petition filed 10 Nov. 2009, petition decision mailed 25 January 2010.

This application contains claims 6-8, 11-12 and 22-26 drawn to an invention nonelected with traverse in the reply filed on 16 April 2009, petition filed 10 Nov. 2009, petition decision mailed 25 January 2010. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants multiple use of conjunctions and a lack of

punctuation render the alternative grouping of claim 20 indefinite. See MPEP 2173.05(h).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 9-10, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson, US PGPUB 2003/0077625. Hutchinson (abstract; paragraph (¶) [0014] et seq; ¶ [0018]; ¶ [0067]; examples and claims) disclose nanoparticle monodipersed, ligand-stabilized dispersions. The nanoparticles (¶ [0071]) are generally 1-2 nm and stabilized with thiol compounds (¶ [0082]). Hutchinson (¶ [0108] et seq) discloses spin coating and evaporating the solvent in the formation of coated substrates.

Hutchinson differs from the claims in an explicit recitation of the fluid viscosities and concentrations of the ligand stabilizer.

Hutchinson (¶ [0150] and [0151]) discloses a gold to sulfur ratio of about 2.3:1.0. This corresponds to a 40 % by wt loss using thermal gravimetric analysis. The Hutchinson reference also discloses 33.5 % by weight loss for hexadecanethiol. This equates to about 50 parts of the hexadecanethiol per 100 parts of the metal. It would have been obvious to one having ordinary skill in the art to provide an effective amount for the function explicitly taight in the Hutchinson reference., *i.e.*, stabilize.

See also MPEP 2144.05(I) wherein it sets forth, "A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. ***Titanium Metals Corp. of America v. Banner***, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985)."

Furthermore and while Hutchinson is silent regarding explicit fluid viscosities, Hutchinson (¶ [0108] et seq; and examples) discloses deposition of the metal particles on substrates, the readily solvent solubility of said particles and the deposition of dilute solution. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the concentrations of the particles based on the thickness of the coating; the coating components, *i.e.*, ligands and solvents, employed; and the application of said coated substrate.

It is further noted that the concentrated dispersion is deemed a future intended use and there is nothing of record to show the claimed compositions would be

unobvious in view of the teachings of Hutchinson by mere variation of the solvent concentration for a desired end products clearly contemplated in the Hutchinson reference.

Response to Arguments

7. Applicant's arguments filed 10 Nov. 2009 have been fully considered but they are not persuasive.

8. Applicants' (page 10) comments regarding rejoinder are noted. Group I is not deemed allowable at this time.

9. Applicants (pages 10 and 11) assert the Hutchinson reference lacks a teaching of the coordinate bonding required by the claims in the coating when the compositions of the Hutchinson reference are coated. This has not been deemed persuasive since the materials of the Hutchinson reference are substantially the same as those claimed. Applicants provide no evidence that the properties of a coated product therefrom are necessarily obtained in the materials for the scope of the claims and that they are distinct from the Hutchinson reference materials.

10. Applicants (page 12) assert the Hutchinson reference lacks the 10 to 50 parts by weight per 100 parts by weight of the metal limitation. Applicants assert a 40 % wt loss of the thermal gravimetric analysis corresponds to about 66 parts by weight /100 parts of Au. This has not been deemed persuasive since Hutchinson also discloses 33.5 % by weight loss for hexadecanethiol. This equates to about 50 parts of the hexadecanethiol per 100 parts of the metal.

11. Applicants' (page 12) arguments regarding the low temperature removal has not been deemed persuasive since there is no evidence in the record supporting applicants' conclusion.

12. Applicants' (pages 12 through 14) arguments to the coordination bonding in the coated final product and the relationship of the metal to ligand ratio affecting said coordination bonding have not been supported by evidence and amount to mere speculation.

Furthermore, the claims employ open language, *i.e.*, have not been limited by closed language, and do not exclude the presents of other than coordination bonding. One skilled in the art would expect some coordination bonding based on the arts characterization of the materials as ligand exchange compounds.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel S. Metzmaier/
Primary Examiner, Art Unit 1796

DSM